

Woody: This is supposed to be about what do you think are video tools? In my mind, what do you think are the specialized video tools, that cannot be obtained through the Sony Corporation of America? What were the tools you ever encountered, influenced, developed, worked with, named? If you have ever developed your own language? You have described your own work in some particular way that should be put into some kind of book? These are the basic questions. So the question is about the tools. What were the relationships to your developing this tool, what were your influences? To begin with.

Skip: To begin with; that sounds like the whole story. The first thing that comes to mind when you say, "What are my tools," I just think of sitting in a basement with a camera and a monitor and the first tools I had were just a CV studio camera.

Woody: So tell me what it was. What was the craft of one camera and one monitor?

Skip: It was feedback. I would leave a set up in my basement back room. A camera shooting into a monitor, just the simplest camera and a monitor at an angle so that there was . . . I was starting to get what I call the basic daisy in feedback. And the basic daisy was just five armed or eight armed depending on the angle of the camera feedback blob. And the first tool was my finger on the contrast and brightness knobs seeing that that drastically affected the response that the feedback generated. And playing with the brightness and contrast and obviously the zoom, focus and the tripod with its angle, with what angle was I leaving the camera? And I used to leave the camera at a particular angle because there was generally so much to explore in one particular angle that and movement was so awkward that I . . .

Woody: The position of the camera was very important to you? The axial . . .

Skip: Oh right, the particular angle and . . . In my first explorations I went completely almost at 150° treating the screen . . . how can I describe it . . . shooting almost at the same angle as the screen, just off . . .

Woody: You mean the tangent?

Skip: Right. Just off the tangent of the screen to see what that would do. Shooting straight in and going to the opposite side to see what that kind of an angle would do, rather what it created. So position became critical. Generally I ended up wanting to always be perfectly centered, wanting to be . . . finding the true axis into the tube.

(interruption here)

Anyway, I was going to say one other tool that I found just in playing with whatever I was playing with was the termination switch and using termination gave me increased gain. And the next step was to put the . . . was almost automatic that in trying to record some of this stuff I would put into that circuit of the camera to the monitor I would put the deck and instantly discovered that different kind of effect was gotten by trading off contrast and video gain and super video gain with low iris and low contrast was different than . . . the first tool was my mind-finger-gain controls- contrast controls.

Woody: Let's just go into this angularity because I guess that's how you basically achieved particular specific.

Skip: Well, yes, but I don't think I ever found specific feedback, I found generic feedback and managed to play within . . . specific is dangerous in feedback because you're saying that you got a particular . . . you went after a particular image and I never went after a particular image in feedback.

Woody: What I had in my mind was that you achieved, probably, the most controlled mandala I found . . . Since you mentioned you are interested in center, or dead center. Secondly, you are interested in angularities, which always, as you said, you started with the daisy, the five or eight armed daisy and then you find, many modes of working with that particular constraint. So would you go into much more precise description of how you actually achieved control, because feedback is normally very hard to control. How did you confine this into the way you liked it?

Skip: Patience. Waiting for . . . like I would leave a mandala going on the screen hour after hour just leave it there and walk away and just leave it generating itself and come back to it and see what had happened to it and I would notice cycles that it would go through cycles. And maybe the cycle was the electrical pulse in the house or something, which I later discovered had a huge effect on how the feedback developed, that there were cycle pulses in the house. The electricity system and that would effect the cycles that the feedback pattern would go through. The (inaudible) was always the . . . it was like walking a tightrope or something because it was finding a delicate balance because if you went just a little bit past it you lost control and if you went a little bit past that threshold you also lost it. So it was like riding a threshold and riding a balance and learning to and learning what that turning the contrast too fast the whole thing disappeared and taking it at the right speed I could get a change that didn't destroy it. I was how much play you had in that delicate balance and knowing how far you could go and how quickly you could change any particular element of it. But I think I found something very early that gave me a tremendous amount of control that other people don't get early when they start playing with feedback. And part of why they probably give up with it really fast. And that was the use of a mirror and by placing one mirror in a simple daisy feedback that was angled and by its angle was say creating basically a circle, in other words, if the angle was more than thirty percent the image was circular. The point is if I brought a hand in between the camera and the-screen, I would see hands from above and from below and from the right side, from the top, from the left side coming and all the way around in the circle. But if I put a mirror up then the image was repeated and it was kaleidoscopic in that it was as if I was putting in 6, 8, 10 mirrors depending on the angle.

Woody: Now let us understand. Where would you put the mirror?

Skip: I can show you if you can make it verbally.

Woody: Have you ever described your draft?

Skip: No, never. If the camera were here the mirror was generally angled below it, balanced on piles of something.

Woody: The edge was horizontal to the screen and then is tilted further back maybe 30 degrees.

Skip: Right. And how far up you moved it, how far down you moved the camera; all those relationships completely changed the image so that every variation had an effect the more you . . . the slighter the angle, the less the angle the better the reflection in the piece of glass. In fact, I discovered you didn't need a mirror at all. The piece of glass alone at that angle had so much reflective capability, but by using the mirror I instantly got feedback where the delicate balance, the range was amplified . . . you had to practically knock the camera over to lose an image. The image was forcing itself . . . it was somehow . . .

Woody: It wanted to live?

Skip: Yeah. Everything you did to it kept it going so instead of how finding that if you move something just a little too far you lost it you just got something else, you just got something different and it became just a question of esthetically here you wanted to stop between zooming . . . Much more flexibility with the mirror and just with the simplest element of the mirror just barely coming into the picture suddenly the range was expanded fantastically and again every angle, every . . . you could raise the mirror up to the point where it was coming up to almost the half way point on the screen or all the way down almost to the bottom of the screen depending upon how you positioned . . . It was also the first way that I could fill the screen with an image. It meant the entire screen could always have image in it.

Woody: In a kind of elementary sense, an overall black.

Skip: So, I tried as hard as I could not to let anyone know about mirrors for a long time, until people discovered it, because it was such a simple trick.

Woody: Is that what happened?

(interruption)

Woody: Is that what became "Jonas' Favorite?"

Skip: The mirror? No. That was a whole other discovery. That was discovering the Setchell-Carlson with the detail knob and very simply . . . it's a Setchell-Carlson with a detail knob, a camera . . . By that time I was inside the camera fiddling with the beam and . . . with everything. I fiddled with that . . . I ruined three cameras I'm sure, fiddling with them and not knowing however to get them back into a legitimate signal. And "Jonas" was a combination of finding out that one, you could get tremendous enhanced resolution with the simple detail now on the Setchell-Carlson and discovering that very low contrast and brightness positions going to the point where you couldn't get an image and gradually creeping up in contrast and brightness and balancing between contrast and brightness to the point where the absolute most resolution which always was low. Everyone else always had the contrast and brightness set up high to begin with.

And I got into turning them down low and as soon as I got into turning them in low ranges and starting playing with the internal controls, the gain and the beams I started getting the ability to control the speed of the image and usually the image was going too fast, too fast for my interests. And, one of the first corollaries that I developed was that the more you turned up the target voltage and the lower you turned the iris in combination, the slower the image got until you could really get it to really look like slow motion, to crawl like slow motion. And then I think by adding the removal of the pedestal, by dropping the pedestal down below, so the blacks became completely black pushing the beams high I got this waterfall off the edge effect where things would just roll right off as if they were rolling off the edge of a cliff or something.

Woody: You mean that the center . . .

Skip: I'm speaking basically of stuff crawling out to the edge and falling over.

Woody: That's what you call . . . Because I see a kind of logic division, where it divides itself, and . . .

Skip: To me, I could get a feedback that was either pouring into itself, pouring out of itself or floating at some sort of . . . a semi-solid state where it would regenerate itself, but not push at you or suck away from you or something like that. "Jonas' Favorite" was some combination of the high resolution mandala effects that were created by the . . . Also that had a great deal to do with running it through a 5000A. The 5000A and a circuit very much like the image plus circuit on the Microtime that cleaned the signal and enhanced edge and so a lot of my tools were found that way by opening up a machine and starting to play with the controls. And many times blindly found, completely blindly having no idea what the fuck I was doing, what knob I was pushing, just pushing and seeing the result.

Woody: Besides this, what would you say was kind of your "discovery," with discovery in quotes.

Skip: "Discovery?"

Woody: Was your favorite pastime. Because I know you have been involved with the Vidium interface.

Skip: Yeah, That was . . . I guess I feel that that was something I bumped into and I guess I got so much of it that I got really bored with it.

Woody: Was the design final when you met it?

Skip: Actually the first time I saw the Vidium Doug McKeckney (sp?) was playing audio tapes into a live color vidium that had an interface board that would trim the sound, whatever sound was being put into it but particularly Doug's synthesized sound into various lissajous patterns and Hearn had already perfected the colors changing by the intensity of the sound, and so it was multiple colored. He had a color television that he'd taken the yoke off of and controlled the, I think he had similar controls, it was like it was a monochromed image that was multi- colored. I

don't think he had the three guns separated into three different image producers. The three guns were all producing the same image and part of it the red gun would be on, part of it the green gun and part of it the blue gun would be on. And which gun was on, or how much of which gun would be on had related somehow, or at least he claimed that it was related to something like the volume of the sound or I think it was how loud something got whether it turned red or blue or something like that. But at the time any interest in the vidium was totally in its ability to generate an image and I always thought that I did not do the Vidium any justice at all, because I didn't care at all for the kind of complicated images the Vidium could create, cared only for the very simplest images it could create, because my interest was mixing it into feedback and having it be a central image in the field of image. And that's something I struggled with from the very beginning, to try to achieve some sort of a key and I knew that somehow intuitively that what I wanted was the image completely isolated from anything else, in other words, a simple white on black image where the white was keyed through and the image was simple kinds of circles that pulsed to the sound of the music or waved to the sound of the music that could mix in to feedback. And I think I talked Arthur into buying the Viscount almost solely based on the fact that it could key a signal and that I couldn't achieve what I wanted to achieve without keying.

Woody: You mean you wanted some figure against some background?

Skip: Not against the background but against feedback specifically. In other words, I knew I wanted figures isolated in feedback, and I wanted them isolated well in feedback. I didn't want them . . . I had this SEG which is one of the first SEG-1s which has the characteristic when you press two buttons down, on sort of soft keys into the other. When you press one and two simultaneously, the combination involves one of the cameras everything black almost disappearing out of the picture. I'm sure that depended on how it was, how the particular camera was adjusted, how much iris was on a particular camera. But that's how I first got any kind of mix of feedback and the Vidium. And that was really my interest, something I could point a camera at and get into a feedback field.

Woody: As an input to the feedback?

Skip: Right. And I had no real interest in it at all as what it could do itself and really wasn't at all responsible for in the Moog Vidium pieces what particular shape it took or how it evolved. I was really fed that by Hearn and Doug. And an interesting sort of sidelight of the Moog Vidium was that I wanted desperately to get Doug to turn the sound off and just look at the picture and play not for the sound and play for the picture. He could never really accomplish that, he just never would do that and I never understood enough about the Moog at the time to get my fingers (off) the Moog and turn the sound off and just watch how it affected the shapes of the pictures and the pulse of the pictures. That was something I was interested in seeing. And also I guess the Moog Vidium sort of started to wet my appetite for as soon as I had keying at all I instantly wanted keying and colorizing, I had . . . Arthur brought Jackie Cassen's CT Lui Colorizer.

Woody: That's George Brown's.

Skip: George Brown's Colorizer. I was just totally frustrated by it. I mean you could turn . . . there were four knobs and I never knew what any of the knobs were doing. I could see what they

were doing, but I never could make any intelligent decisions about how I wanted something to look with it. I was just sort of left with whatever I got and it brought me to the point of saying to Hearn that I had to have a colorizer where I had separate control over separate areas. And he just . . . he really said, "Well of course I can make a colorizer!" He could make anything at the time and I'm sure he can, but at the time he could make anything and he could make a colorizer, So I said, "Fine, make a colorizer," and we agreed to pay for parts, VFA would pay for parts or something and he and Alan Shulman would hammer out trying to get it done. And the original colorizer is still sitting up stairs.

Woody: There was no special budget, so to speak, or application. It was taken from your operating budget.

Skip: Right, it was spending money that always came from us doing another job for somebody else

Woody: Did he invest his own time into it?

Skip: Yes, he invested his own time and energy into it, knowing full well that it was going to have applications beyond the simple colorizer that I could play with. And what I asked for and got--I didn't realize it at the time--was basically a simple bank of five background generators with keyers in between, with keyers that would divide between the five background generators. He eventually dropped it down to four for his production models, but the old original one has five. I knew that I wanted to be able to . . . I was very frustrated by not being able to turn something that was light, like the white image of the Moog Vidium that was the first image in the Moog Vidium feedback tape, which was the brightest image. I wanted to be able to make that look dark red or dark green or dark blue or dark anything. And I couldn't do it because the George Brown colorizer had no effect on the gray level of it. And so I said I got to be able to drop that gray level down. I gotta be able to make that gray level black so that that image can be deep red or deep blue. And so that the background instead of always having to be dark could be light by pushing it up. And I think I instantly developed an esthetic of reversing what I was given always, and always going for making brighter images dark and darker images bright. And having that gray level be the heart of what colors I got. Immediately started playing with hue, chroma and gray level on each separate out section of the picture. And part of it was to insist that I had to be able to colorize one part of the picture without having to change the color of the other parts of the picture. It seemed revolutionary at the time that he could put out a machine that would do all that.

Woody: To what degree do you feel that you have influenced these particular elements that you have described.

Skip: Those elements of his colorizer? I feel like I'm, in that sense, the architect, the conceptual architect of having . . . Because it's exactly what I asked for. I asked for gray level control, separable key levels and gray level and chroma and hue control over each level separately. Now, since then he's added a shitload on top of what . . . of that. On top of that he's added being able to mix the picture back into any one of the gray levels, being able to mix a different picture into any one of those gray levels.

Woody: Was there any memo that was communicated between you two guys? Did you ever describe what you wanted?

Skip: No. This is totally, off the record, but I got that for . . . **(deleted)**

Skip: . . . Bill Etra is the architect of the Videolab to my mind, completely. And now my only contribution to the video engineering and all that is that I was the person who said, "make me a colorizer," to Bill Hearn. And to whom he said back, "I can, I can do it." Alan Shulman deserves a certain amount of credit for having worked with him and made it happen to the extent that I never could have. As a liason more than anything else he kept saying, "OK, let's do this, let's do that." I think, I don't really know. All I know is that Alan was always working with Hearn when that first colorizer was built.

Woody: How many were built? The one that you've got . . .

Sweeney: That one prototype was the first. No one else that I know. It was used by other people that came through here and wanted to colorize something.

Woody: Anyone do some substantial work on it?

Sweeney: No, and I think that the substantial work that I did on it was almost all redone as newer colorizers . . . as something I learned right away was to shoot all my images in monochrome and not to colorize them. Because if they were colorized it was very difficult to retrieve them from the George Brown colorizer and recolorize them a different way. So I started and have continued to do almost all my base work for images in black and whites because I still believe there will always be a better colorizer.

Woody: You had two colorizers here? George Brown and Hearn.

Sweeney: Yeah, although I think George Brown's went back to Jackie Cassen at some point. Or as soon as I had that one I didn't want to play with the other one at all.

Woody: And that was the last (coordination) you had with Bill Hearn? Did you continue in any way thinking about the next generation?

Sweeney: You mean about a colorizer? No. I was always in touch with Etra and you and hearing things about voltage control, so I knew that Bill Etra had gotten him to apply voltage control to his basic colorizer. He gave the exact same colorizer I had, which was now a third prototype or something like that, Etra took and had him do complete voltage control on the colorizer.

Woody: Let's go back to the esthetic part in which you described you could separate or slice or classify the image into four steps and control them independently.

Sweeney: That's something . . . I went to Chicago in '73 or something and met a friend of Dan Sandin's who was teaching at . . .

Woody: You mean Phil Morton?

Sweeney: A friend of Phil Morton's. Matthew something, I can't remember his name. He'd almost put together a Sandin synthesizer and would turn the knob and would have what looked like a soft key effect and I kept saying that's a key and he kept saying, no that's a comparator and I kept saying that it looks like a key to me, you're going through the luminance level of the picture. And I could never understand what the hell he was talking about. I mean, I figured comparator, you're comparing levels or something or doing something to them. But to me, the effect was keying, the effect was . . . and for me, when you take a picture that's you know, the waveform goes like this and you take a line and you go through from low luminance to high luminance or from high luminance to low luminance and get an effect from one side of the line to the other. That's keying. Now, I'm sure it probably isn't always keying. There's other terminology for it.

Woody: Sandin didn't know television terminology. He called it comparator because that's the circuit on which a key is based.

Sweeney: But it was a keyer then. That's what I thought they all seemed like to me, and it seemed like he had multi-level keyers also.

Woody: He calls it an image classifier. It classifies the voltage levels.

Sweeney: To me that was just clip levels or something.

Woody: **Indistinct but something about modular system performance.** He didn't have any language of video or any language television. What other, then you worked with slo-mo I recall. You had a period, which was kind of always probably . . . (**indistinct**) but something about slo-mo.

Sweeney: That was really just, again, I just happened to bump into a machine that did clean slow motion. It was a Javelin slow motion machine that recorded 7 hours, it had two speeds, 7 time and regular speed. And the machine . . . you could record in slow speed and play back in regular speed, you got fast motion. You could record in regular speed and play back in slow and you could do multiple generations and get down to 49 times slower. It was really just that the machine was there so I started putting tapes through it, because I just knew instinctively that I liked slow motion. A lot of the Moog Vidium stuff was too fast for my taste so just being able to slow it down and to be able to slow it down clean so it looked like it had to be disc slowed down for nothing but making a dub of it. There were different effects too. There was one effect that was to me the most fascinating which was the process of . . . if you took a tape and recorded it in slow speed and then played it back in slow speed you got an effect . . . skip frames or jump frames. It'd record certain frames and then record another frame and then record another frame and then record another and it would . . . The effect was that you played back a tape going in real time and you played back a tape that had been recorded in slow motion played back in slow motion and this tape looked normal and this tape jumped and looked as though it were slow motion. I guess it's stop action. It had to be stop action but it had the look of slow motion. You

could watch the two tapes and the time was the same but the stop action . . . it was an effect I really liked. Again, it was something I discovered this machine could do and I just happened to have this machine.

Woody: Is "Illuminating Sweeney" a representative work? Is it a summary? If someone sees those tapes is that according to your ideas of what you are all about, of what you are?

Sweeney: As much as a half-hour of tape can. It shows, I think for instance the ocean tape was clearly for me just an exercise in trying to show what a simple colorizer could do. How it could take a tape, just a shot of the ocean and one black and white tape and make it first look like it's a color tape and then go beyond into realms of fantasy colors and go back out again. And I felt that it was a very and . . . and that's more my esthetics than my tools, but my esthetics are to do things very simply and straightforward and to maybe demystify the process and not have it seem like I'm a magician, but have it seem like I'm doing what I am doing which is taking things available to me, putting them together in ways that look more interesting than when they came to me in the first place.

Woody: Did you ever make a tape on how to make a feedback?

Sweeney: No, I think I tried once to make a 'how to make a feedback' tape. No, I don't think I do.

Woody: (indistinct, but something about Sweeney's other craft activities).

Sweeney: The only thing is that when we were doing the Moog Vidium we always shot us actually doing it. And to me the Moog Vidium piece that's in "Illuminating Sweeney" I went back and forth between, the process and the produce. I think I may have had too much of the process and not enough of the product, but it was totally to try . . . again, it was shot simultaneously. It was the exact same moment what you were seeing in picture you were seeing the process of the making of it and to me it was just like letting people see . . . it was collaged at WNET when they had quad machines.

Woody: So you had two tapes.

Sweeney: Right, in fact. It's great, you know it was a five-minute piece but because one was shot on portapak and the other was shot on a regular deck they were completely out of speed. So John Godfrey sat there, as I would have the engineer dissolve to the product which would go faster. John would drop the servo on the AV-1 so that the AVR-1 would catch up and speed up and as soon as he could hear sync he'd say, "OK, now you can mix back," and we'd mix back into the process until it sounded like it was getting too far out of sync and John would . . . and we'd go back to the product and John would . . .

(stuff follows, which is unnecessary)

Woody: I see, but the segment you have is a complete segment. I mean, there is nothing missing. Do you have hours . . . ?

Sweeney: Oh yes, I have hours and hours and hours of both the process and the product. And, no, the piece is not at all . . . I tell you I decided to give up on the idea of all the varieties "because I didn't have the production time to put in all the little . . . I could have put in a section that was five minutes long. I could have put in three minutes of that and two minutes of all the other things that system was capable of generating in types of images, which were generated as we played with it and could have done five seconds of 100 different variations.

Woody: Is there any of this material in what you sent to O'Grady?

Sweeney: Yes, almost all the original Moog Vidium materials, and they're all the variations of the different kinds of pieces that are in there.

Woody: Did you have any relationship to people like . . . let's say Steve Beck?

Sweeney: No, the barest kind of contact. I was once . . . Bill Roarty came over once and saw some Moog Vidium stuff and he said "Hey, you're doing stuff that we're doing. We really should be working together and you're doing very similar stuff to us." And I went over there a couple of times and got no real sense . . . I went there when you were here.

Woody: Cold shoulder, huh?

Sweeney: Well, sort of, but I remember Bill Roarty saying to me that we ought to get together and do something and I think if anything I might have given him a cold shoulder at the time, because my head was on Steven Beck and Don Hallock and didn't know who Bill Roarty was and wasn't, you know . . . Although I remember sort of wishing I had related to him, but . . . I think, there was some weird number going on feeling that these people were being paid to do what they were doing and we were doing it by the seat of our pants. And we very much felt like we were capable of generating just as interesting an image with what we could pull out of our hat while they appeared to be extremely well funded and that all they really had for all their well-funding was Steven Beck and his ability to make a direct synthesizing machine. He would have done it on his own anyway, I think.

Woody: Were you aware basically, I guess you weren't aware of any other tools except (inaudible) synthesizer at that time. Did you have any introduction to electronic tools?

Sweeney: Well, you know SEGs and switchers I was aware of. Because I was going to New York just about every year I was aware of the Rutt/Etra synthesizer and I was super aware and am still totally, hung up in your floating pictures. I mean that was . . . I seriously am trying to make that happen on a broadcast program and feel like it's a Vasulka inspired.

(chit-chat about computers to 231)

Woody: But were there any local shows like I recall in the Exploratorium? There must have been some technological base before you started doing video anyway here.

Sweeney: Technological base?

Woody: There must have been some activities around, electronic arts or did you stumble over this video just by chance.

Sweeney: Yeah I stumbled. I stumbled into feedback in '68 and I know from '68-70 or so there were EAT . . . I think the Exploratorium really evolved out of the EAT.

(Some omissions for irrelevance until 268)

Woody: The question is, what do you think about the matrix? Whose idea was it, what did it do to you?

Sweeney: Really it was Arthur's idea and it was based upon primarily the idea of multiple monitor, multiple track video theater display. So when we thought we were going to do a multiple . . . Actually it was Arthur's idea and actually it was a technician, I can't remember the guys name, Arthur would know, something like Bill Hayward. And basically he figured out that you could terminate the signal before you sent it to the monitors and thereby send to many monitors or few monitors and not change the signal. The monitors have to be unterminated.

Woody: Do you think it has any impact on what you were doing esthetically?

Sweeney: Oh yeah! It was more like economically, we would have had to spend thousands and thousands of dollars to get a good signal to each monitor and not effect the total signal.

Woody: But esthetically do you think this eventually led into the theatrical involvements?

Sweeney: In the theatrical stuff I think the impulse was there to begin with. I started . . . the first thing I decided I had to do was to do public showings of material. It was an automatic impulse or something. I came out of theater and doing shows was just auto-matic, I just had to do shows.

Woody: The idea of multi-channel . . .

Sweeney: Even multi-channel was done in (inaudible name) was two track . . .

Woody: The Vasulkas developed also a switcher, we had a pin matrix. So don't you think the whole electronic video presentation was trying to be multi-channel?

Sweeney: Sure, but I think that was more because in your head you were trying to compete with big screen, and the only way you could compete with big screen was many little screens and a variety of those little screens.